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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,116	08/31/2001	Jiandong Shen	CISCP193/3930	2081
22434 7590 02/14/2005 BEYER WEAVER & THOMAS LLP P.O. BOX 70250 OAKLAND, CA 94612-0250			EXAMINER SENFI, BEHROOZ M	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 02/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/945,116	SHEN ET AL.	
	Examiner	Art Unit	
	Behrooz Senfi	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>dec-2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 25 is objected to under 37 CFR 1.75(c), as being of improper dependent form. Claim 25 should be dependent to claim 23 not to claim 24. Claim 24 does not include the steps as cited in claim 23. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 20, 23 – 36 and 39 - 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Kikuchi et al (US 5,912,706).

Regarding claim 1, Kikuchi '706 discloses “ a system for providing video data” (i.e. fig. 1), and “a decoder configured to receive a bit-stream, comprising video data and n error vector index” (i.e. fig. 4) and “a codebook comprising a set of error vectors and an error vector index associated with each error vector, each error vector in the set of error vectors comprising an array of predetermined motion compensation errors” (i.e. col. 7, lines 14 – 35).

Regarding claims 2 – 3, 10 – 12 and 16 - 18, the limitations, decoder apparatus performs motion estimation and compression on “a pixel by pixel basis” reads on (i.e. figs 17 – 18, pixel accuracy).

Regarding claims 4, 6 and 13, the limitation “decoder apparatus generates reconstructed video data in claim 4”, (i.e. col. 1, 12 – 19) and “codeword decoder that decodes a codeword for the error vector, in claims 6 and 13” as claimed, reads on (col. 3, lines 1 – 3).

Regarding claims 5 and 36, the limitations “predetermined motion compensation error include a predetermined motion compensation error for each pixel in the block” as claimed, reads on (col. 48, lines 13 – 19).

Regarding claims 7 – 9, 34, 44 and 46, the limitations as claimed are similar to claim 1, therefore the ground for rejecting claim 1 also applies here. Furthermore, for additional limitation “converting the error vector index to an error vector” please see (col. 18, lines 21 – 29), and as for “computer readable medium in claim 46” please see (fig. 38, computer 1001 and workstation 1005).

Regarding claim 19 - 20, the limitation “error calculator” as claimed, reads on (fig. 6, error calculator 202).

Regarding claims 14 - 15, the limitations as claimed are substantially similar to claim 1, therefore the ground for rejecting claim 1 also applies here. Further more for the additional limitation “an encoder apparatus that receives uncompressed video data” please see (fig. 5, encoder apparatus) and “system encoder that embeds a selected error vector index in the compressed video data, in claim 15” (i.e. col. 4, lines 51 – 62, col. 5, lines 15 – 39).

Regarding claims 23 – 24, 32 and 45, Kikuchi '706 discloses, “a method for encoding video data, comprising; generating synthesized video data” (i.e. fig. 5), and “comparing and selecting” reads on (i.e. col. 18, lines 14 – 28).

Regarding claim 26, the claimed “performing motion estimation” reads on (i.e. fig. 5, MC 125).

Regarding claims 27, 28 and 33, the limitations as claimed are substantially similar to claims 3, 12 and 15, therefore the grounds for rejecting claims 3, 12 and 15 are also applies here.

Regarding claims 29 – 30, the limitation as claimed, “partitioning the video data into blocks” and “wherein the block has a rectangular or square shape” reads on (i.e. col. 3, lines 44 – 45).

Regarding claim 31, the limitations as claimed, and “coding mode” reads on (i.e. col. 10, lines 18 – 26).

Regarding claims 40 – 41, 35 and 39, the limitations as claimed, “generating a cluster for each error vector in code book and receiving a set of motion compensation error block” reads on (i.e. col. 44, lines 40 – col. 45, lines 13) and “assigning each of the motion compensation error to a cluster and designating” reads on (col. 44, lines 63 – 67 classifying) and “updating” reads on (i.e. col. 45, lines 12 – 13), and “codeword in claim 39” reads on (i.e. col. 23, lines 27 – 29).

Regarding claims 25, 42 and 43, the claimed limitation ““repeating the steps of” reads on (i.e. col. 45, lines 1 – 3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 21 – 22, 37 – 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi '706 in view of Morris et al (US 5,818,536).

Regarding claims 21 – 22, Kikuchi '706 teaches “encoder for receiving and encoding uncompressed video data and codebook comprising error vectors” as discussed earlier. Kikuchi '706 fails to explicitly show “synthesis cost/coding cost” as claimed. However the above features are well known and used in the prior art of the record as evidenced by Morris '536 (i.e. abstract, lines 12 – 15) wherein teaches the cost function to provide the best trade-off for motion vector accuracy. Therefore it would have been obvious to one skilled in the art at the time of the invention was made to use the teaching of Morris '536 and modify the system of Kikuchi '706, to improve the video coding effectiveness.

Regarding claims 37 – 38, the limitations as claimed “wherein the codebook includes between about 256 error vectors and about 4096 error vectors” and “wherein the codebook includes between about 512 error vectors and about 2048 error vectors”, is actually the number of error vectors, which depends on desired accuracy. Therefore, reads on “selecting candidate vectors with respect to accuracies” as taught by Kikuchi

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'706 and Morris '536 (i.e. col. 4, lines 20 – 25 of Morris and col. 12, lines 35 – 39 of Kikuchi).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(703)305-0132**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chris Kelley** can be reached on **(703)305-4856**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:


(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

B. S. B. S.

2/1/2005


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600